

REMARKS

Claims 1–21 were previously pending in this application. Claims 1, 14 and 19 have been amended herein. No new matter has been added. Applicants respectfully request reconsideration of the Application in view of the foregoing amendments and the following remarks.

Claim Rejections – 35 U.S.C. § 103

Claims 1–18 and 20–21 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Shimizu et al., U.S. Patent No. 6,275,754 B1, in view of Schofield et al., U.S. Patent No. 5,949,331. Claim 19 has been rejected under 35 U.S.C. § 103(a) as being unpatentable over Shimizu et al. in view of Schofield et al. and further in view of Franke et al., U.S. Patent No. 5,485,378. Applicants submit that the claims are patentably distinct from the cited references, taken either alone or in combination.

The July 18, 2006 Final Office Action indicates that Applicants' amendment to claims 1, 14 and 19, to include "while a driver operates a steering wheel," is not patentably significant because the limitation was placed in the preamble and not in the body of the amended claims. See Final Office Action, 7/18/06, p. 2. Applicants have amended claims 1, 14 and 19 to include such limitation in the body of each independent claim. The Final Office Action further states that the "while a driver operates a steering wheel" limitation is taught by Shimizu et al. in column 6 at lines 23–24. See Final Office Action, 7/18/06, p. 2. However, according to the Shimizu et al. Specification, when the automatic steering system is in operation, the vehicle is automatically steered based on a selected parking mode, e.g., "back parking/left mode" as shown in Figures 3A–3C, even when the driver do not operate the steering wheel. See Shimizu et al., col. 6, ll. 19–24. Shimizu et al. also make clear that steering the vehicle is actually one of the ways for disengaging the system of Shimizu et al. but does not disclose, teach or suggest that the system is capable of operating while the driver steers the vehicle. See Shimizu et al., col. 7, l. 3. Actually, the invention of Shimizu et al. is completely silent as to "a display control unit for

displaying a guide marking for aiding steering while a driver operates a steering wheel” when the vehicle is being driven in reverse. The phrase “even if the driver does not operate the steering wheel 1” in column 6 at lines 23–24 of Shimizu et al. does not in anyway disclose, teach or suggest that the Shimizu et al. system may be steered by the driver while the automatic steering system is in operation.

The July 18, 2006 Final Office Action also asserts that Figures 6A–6C of Shimizu et al. show a first indication and a second indication, which are simultaneously displayed on the display screen (11), as disclosed by Applicants. See Final Office Action, 7/18/06, p. 3. The invention of Shimizu et al., however, does not provide a driver with the ability to make a comparison via the display screen between a fixed reference guide frame based on the current direction of the vehicle, i.e., a first indication, and a fixed reference guide based on the current steering angle of the wheel, i.e., a second indication, such that the driver may manipulate the steering wheel to remain on course when driving in reverse. Rather, the Shimizu et al. invention simply displays a target path imposed on an image of the surroundings, wherein the target path is not used for aiding steering. The display elements in Figures 6A–6C, namely a superimposed path and a circular target, do not aid the driver in steering the vehicle.

The July 18, 2006 Final Office Action also re-asserts that the paths P_o-Q_o and Q_o-R_o in Figures 10 and 15 of Shimizu et al. represent a “first indication” and “second indication,” respectively, as disclosed by Applicants and that the first indication, i.e., path P_o-Q_o , and the second indication, i.e., path Q_o-R_o , are simultaneously displayed. See Final Office Action, 7/18/06, p. 5. Shimizu et al. do not disclose, however, a first indication, wherein the first indication is a fixed reference guide displaying vehicle width projected behind the vehicle, which is simultaneously displayed, i.e., superimposed, with the second indication while the vehicle is being driven in reverse. Shimizu et al. only disclose a target path that the automatic steering system will automatically follow without steering input from the driver. As defined in the Final Office Action, the first indication of Shimizu et al. does not project behind the vehicle and,

rather, merely represents a target path along which the vehicle is automatically moved forward when the automatic parking control is performed. In Applicants' invention, the first indication is not a path along which the vehicle is moved but, rather, represents the current direction of the vehicle based on the current orientation of the vehicle's rear bumper. Similarly, the second indication of Shimizu et al., as defined in the Final Office Action, is a target path along which the vehicle is automatically moved and is not a prospective path corresponding to the current angle of the steered wheels as recited in Applicants' invention.

The July 18, 2006 Final Office Action further indicates that the claim language does not reflect Applicants' argument that Shimizu et al. fail to disclose a second indication that continuously changes when backing to reflect the current predicted path of the vehicle based on the angle of the wheels at that point in time. See Final Office Action, 7/18/06, p. 3. To the contrary, because the display control unit displays a guide marking for aiding steering while a driver operates a steering wheel while "the vehicle is being driven in reserve" and the second indication "shows a prospective path of the vehicle corresponding to the current angle of the steering wheels," claim 1 necessarily discloses the second indication as being a dynamic marker that is continually changing in response to the driver's steering input.

Regarding claim 14, the July 18, 2006 Final Office Action restates that Shimizu et al. disclose displaying a marker that is fixed at a predetermined position with respect to a monitor for aiding a driver in parking, wherein the vehicle is moved in reverse so as to cause the marker to coincide with a corner of a parking space displayed on the monitor, followed by backing while keeping the steered wheels turned at their maximum angle. See Final Office Action, 7/18/06, pp. 9–10. The Final Office Action further indicates that Applicants' assertion that Shimizu et al. fail to disclose a system whereby parallel parking is completed by moving the vehicle while the driver is operating the steering wheel so as to cause a marker to coincide with the corner of a parking space as displayed on the monitor, wherein upon the marker matching the corner of the parking space, the wheels are turned to their maximum steering angle is not reflected in the claim

language. See Final Office Action, 7/18/06, pp. 3–4. To the contrary, claim 14 states that “the parallel parking is completed by moving the vehicle in reverse so as to cause the marker to coincide with a corner of a parking space displayed on the monitor, followed by backing while keeping the steered wheels turned at their maximum angle.” As amended, claim 14 also indicates that the marker is displayed on the display control unit “while a driver operates a steering wheel.” Thus, it is clear from the language of claim 14 that parallel parking is completed by moving the vehicle while the driver is operating the steering wheel so as to cause a marker to coincide with the corner of a parking space as displayed on the monitor.

The Final Office Action also avers that the combination of Shimizu et al. and Schofield et al. renders Applicants’ invention obvious to one skilled in the art. See Final Office Action, 7/18/06, p. 5. The invention of Schofield et al. is directed to improving the display of rearward images captured by a rearview vision system for a vehicle. See Schofield et al., col. 1, l. 13–col. 2, l. 24. Although the July 18, 2006 Final Office Action states that Schofield et al. evidence a fixed reference guide displaying vehicle width projecting behind the vehicle, the Specification of Schofield et al. makes clear that Figure 6 and hash marks 70a and 70b, in fact, change configuration in response to the angle of the steering wheels of the vehicle. See Schofield et al., col. 10, l. 48–55 (“If the wheels were turned in the opposite direction, graphic overlays 70a, 70b would curve clockwise toward the right as viewed in FIG. 6. If the vehicle’s wheels were straight, graphic overlays 70a, 70b would be substantially straight converging lines.”). In other words, Schofield et al. do not teach “a first indication, which is a fixed reference guide displaying vehicle width projecting behind the vehicle.” Thus, Schofield et al., either alone or in combination with Shimizu et al., do not teach or suggest a first indication, which is a fixed reference guide corresponding to the angle of zero degrees of the steered wheels, and a second indication, which is a prospective path corresponding to the current angle of the steered wheels, simultaneously displayed for the purpose of aiding steering when the vehicle is being driven in reverse while a driver operates a steering wheel.

Regarding Claim 19, the July 18, 2006 Final Office Action admits that Shimizu et al. and Schofield et al. in combination are silent as to a vehicle which proceeds “on a route when the vehicle is driven so that the second indication is positioned at a center of the route, the route being an image of a way behind the vehicle actually displayed on the monitor.” See Final Office Action, 7/18/06, p. 11. Nonetheless, the Final Office Action states that the teachings of Franke et al., in combination with Shimizu et al. and Schofield et al., would have made obvious the modification of the steering and viewing systems in Shimizu et al. and Schofield et al., respectively, for maintaining a controlled course. See Final Office Action, 7/18/06, p. 11–12. The invention of Franke et al., however, is directed to a device which provides a driver with the ability to intervene with the steering operation while minimizing the need for the driver to constantly make small steering adjustments to maintain a prescribed set position. See Franke et al., col. 1, ll. 50–67; col. 2, l. 1. Franke et al. are silent as to a method for steering a vehicle in reverse, whereby a second indication is positioned at the center of a route, the route being an image behind the vehicle that is displayed on a monitor. Franke et al., therefore, do not teach or suggest the steering system disclosed by Applicants in claim 19 and, furthermore, fail to remedy the deficiencies of Shimizu et al. and Schofield et al.

For at least these reasons, Applicants submit that amended independent claims 1, 14 and 19 are patentably distinct from the cited references, taken either alone or in combination. Further, Applicants submit that claims 2–13, 15–18 and 20–21, which directly or indirectly depend from amended independent claims 1 and 14, are also patentably distinct from the cited references for at least similar reasons. Therefore, Applicants request withdrawal of these grounds of rejection.

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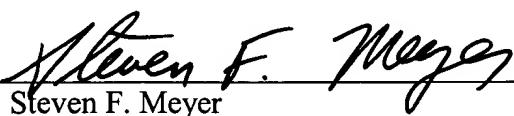
CONCLUSION

Based on the foregoing amendments and remarks, Applicants respectfully request reconsideration and withdrawal of the rejection of the claims and allowance of this application.

Respectfully submitted,
MORGAN & FINNEGAN, L.L.P.

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By:


Steven F. Meyer

Registration No. 35,613

Mailing Address:

MORGAN & FINNEGAN, L.L.P.
3 World Financial Center
New York, NY 10281-2101
(212) 415-8700 Telephone
(212) 415-8701 Facsimile